

MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

The DOT-AGC Joint Bridge Design Subcommittee met on February 11, 2004. Those in attendance were:

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| Berry Jenkins | Manager of Highway Heavy Division, Carolinas Branch AGC (Co-Chairman) |
| Greg Perfetti | State Bridge Design Engineer (Co-Chairman) |
| Paul Lambert | Structure Design Project Engineer |
| Tom Koch | Structure Design Project Engineer |
| Ron Hancock | State Bridge Construction Engineer |
| Chris Britton | Taylor and Murphy Construction Co. |
| Richard Holshouser | Sanford Contractors, Inc. |
| Mark Lively | Crowder Construction |
| Richard Kirkman | Dane Construction, Inc. |
| Gichuru Muchane | Structure Design Engineer |

During the review of the minutes of the December 10th, 2003 meeting, the following items were discussed:

1. Overhang Falsework Research

Mr. Lambert requested the minutes be corrected to reflect that the Department had approved standardized brackets installed with the hanger rod passing through the top flange of the modified bulb-tee (MBT) girders, as well as hangers that are installed on the edge of the top flange.

The minutes of the December 10th, 2003 meeting were approved with corrections.

The following items of new business were discussed:

1. New Jersey Barrier Rails

Mr. Koch stated that Structure Design has revised the policy on detailing New Jersey shape barrier rails. The revised policy maintains the overall barrier dimensions, but shifts the location of the reinforcement in order to provide 2 ¾" (70mm) of concrete cover on the front and back faces of the barrier rail. In addition, the slab overhang behind the barrier rail has been increased from ½" (13mm) to 1 ½" (38mm) for bridges with a cast-in-place deck, and from flush to a 1" (25mm) overhang for cored slab bridges. The top exterior edge of the slab shall be formed with a ¾" (19mm) chamfer. The revised policy also states that the bottom of slab overhangs should be detailed to be approximately parallel to the deck slope. This change will reduce the depth of the overhang.

Mr. Perfetti stated that he had received favorable feedback to the revised policy from Ms. Diane Highsmith, President – Watts Barrier Walls. Contractors present at the meeting were also in favor of the revised policy.

Mr. Holshouser inquired if projects already let can be built according to the revised policy. Mr. Perfetti stated that he had no objections as long as the contractors were attentive to the impact on the dimensions at the end bents.

Mr. Jenkins stated the AGC website was a suitable place to disseminate information to the industry. He suggested that Structure Design policy updates could be posted on the website.

2. *Approach Slabs*

Mr. Koch informed the committee that Structure Design has revised the policy on all approach slabs. The revised policy states that the minimum approach slab length will be 25'-0" (7.62m) and shall have a thickness of 1'-0" (305mm). In addition, the roadway end of the approach slab shall be perpendicular to the centerline of the roadway for all skews between 60° and 120°. For skews of 60° or less, the roadway end of the approach slab shall be fixed at 60 degrees to centerline of the roadway. Similarly, skews of 120° more shall be fixed at 120°. There shall no longer be asphalt pavement on the approach slab. The approach slab reinforcement has also been revised, and the new geometry will require more cut bars.

Mr. Holshouser noted that the longer approach slabs would have to be finished with a mechanical screed (Allen Razor Back or a longitudinal screed). He also inquired if finish grades shall be provided at 10'-0" intervals. Mr. Hancock stated that construction elevations shall continue to be provided. He also suggested that the bridge deck finish specifications will also apply to the approach slab. In addition, he noted the approach slabs will be grooved since they will not have an asphalt overlay.

Mr. Perfetti stated that the reinforced bridge approach fill will extend 4'-0" beyond the end of the longer approach slabs as shown in the Roadway Standards. He noted that there are a couple of ways to interpret the roadway standard detail. Mr. Perfetti stated that the edge of the reinforced approach fill should terminate along a line that is offset by 4'-0" and is parallel to the roadway end of the approach slab. This interpretation will avoid placement of some unnecessary approach fill material.

Mr. Koch stated that the revised approach slab policy will be effective with the July 2004 letting. However, for projects where the hydraulic design has already been completed, Structure Design may have to detail drop inlets on the approach slab. Mr. Hancock stated that it is possible to construct drop inlets on the approach slab. Mr. Holshouser stated that the drop inlets on the approach slabs in addition to all of the graduating steel would increase the cost of the approach slab. Mr. Jenkins inquired why the Hydraulics Unit could not move the drop inlets off the approach slab. Mr. Perfetti stated the Hydraulics Unit could not move the inlets for projects where the hydraulic review has been completed and permits issued. Mr. Jenkins stated that there is an ongoing NCDOT study, being conducted by a consultant, on issues affecting project delivery. This study will examine issues such as flexibility and perhaps this is an issue that can be raised.

Mr. Hancock stated that the Geotechnical Unit had committed to a policy change that will not require bridge approaches to be built to grade, subsequently excavated, and then filled with reinforced approach fill select material.

3. *Future Steel Cost and Delivery Issues*

Mr. Perfetti stated that he attended an AASHTO T-14 - Technical Committee for Structural Steel meeting, and received update on the state of the steel industry. Recent information from the steel industry indicates that as a result of economic growth/activity in China, there has been a 10% price increase for raw steel plates. The steel industry sees no end to the demand for steel from China. The increased demand could cause 4-5 month delivery delays on big projects.

The contractors stated that they have seen price increases and delivery delays on most steel products, especially reinforcing steel, H-piles, and pipe piles. Mr. Holshouser stated that some suppliers have stated in writing that they can no longer guarantee price quotes on steel products. Mr. Lively stated that delivery times had increased from 6 months to 10 months.

Mr. Hancock suggested that if there are delays due to availability then perhaps DOT should consider substituting piles with other foundation options.

Mr. Jenkins stated that some northern states were giving contractors price adjustments and he inquired if NCDOT was willing to do the same. Mr. Hancock responded by stating that in general NCDOT does not provide additional money for contracts. However, he suggested that price adjustments such as those provided for petroleum products might be an appropriate way to negotiate on the matter. Mr. Jenkins suggested that the committee keep Mr. Randy Garris, State Contract Officer, informed as they review bids. In addition, contractors will share information from other states.

Mr. Hancock inquired if seeking relief on the use of foreign material would help. Messrs. Jenkins and Holshouser offered to call suppliers to inquire on the availability of foreign steel.

4. *Changes to Metallization Project Special Provisions*

Mr. Koch stated that the Project Special Provision on Thermal Sprayed Coatings (Metallization) had been revised. Section 6.0 – Repairs now states that repair procedures will depend on whether the repair surface is exposed. In order to achieve a uniform appearance, metallized exposed surfaces will typically need to be repaired in the field.

Mr. Lively inquired if a certified contractor is required for metallization. Mr. Hancock responded affirmatively, and added that there are two certified contractors in North Carolina, but there are more contractors available in other states. Mr. Holshouser inquired if a certified contractor would be required for field metallization of piles. Mr. Hancock stated that it was possible to metallize piles in the field, and zinc rich paint may be used where conditions permit its use.

Mr. Jenkins inquired if some of the language in the Project Special provision could be reviewed. Specifically, Section 7.0 - Twelve Month Observation Period places the responsibility on the contractor for a long period with no payments made during this period. In addition, some of the requirements stated in the document, such as "uniform color and gloss" are subjective. Mr. Koch stated that the revisions were developed from recommendations made by the former NCDOT Chemical Testing Engineer, *however the final document has not been released and that the language is being reviewed.*

5. *Other*

- i. Mr. Britton stated that they were having trouble getting paid for stored materials. In addition, it has become difficult to obtain estimates from the HiCAMS system. Mr. Hancock responded by stating that he was aware of a problem with the processing via HiCAMS. *Mr. Hancock stated that he would talk to Phillip Watts, Construction Estimates and Claims Engineer.*
- ii. Mr. Britton sought guidance on constructing the reinforced approach fill on phased construction projects, particularly on shoring and the impermeable sheet. Mr. Hancock suggested that the approach fill for each phase could be constructed to drain independently, with shoring in between the approach fill material. When complete the shoring could then be removed.
- iii. Mr. Britton inquired if electronic submittals for overhangs were acceptable. Mr. Lambert stated that electronic submittals were okay. Mr. Hancock suggested developing guidelines for electronic submittals.
- iv. Mr. Holshouser stated that the joint seal detail on cored slab bridges was problematic in that trucks often foul the 12" tape. He suggested reverting back to the old design where fiber material is placed in the joint opening and then filled with hot poured rubber.

6. *Next Meeting*

The next meeting is scheduled for April 14th, 2004 in the Structure Design Unit conference Room C, which is a change from the previous date of April 7th, 2004.